

CLAIMS

What is claimed is:

1. A rolling bearing unit comprising:

an outer ring;

5 an inner shaft disposed radially inward of the outer ring and having an inner ring fitting part on the outer peripheral surface on one axial direction side thereof; and

10 an inner ring fitted on the inner ring fitting part and having the inner shaft end on the one axial direction side crimped on its end face on the one axial direction side;

wherein:

the inner ring has a step portion on the one axial direction side of a shoulder portion thereof, and

15 the step portion has an inclined surface shape with a diameter that expands in the direction of the other axial end.

2. A rolling bearing unit comprising:

an outer ring;

an inner shaft disposed radially inward of the outer ring and having an inner ring fitting part on the outer peripheral surface of one axial direction side; and

5 an inner ring fitted on the inner ring fitting part and having the inner shaft end on the one axial direction side crimped on its end face on the one axial direction side;

wherein:

the inner ring has an annular step portion on the one axial direction side of the shoulder portion thereof,

10 the step portion has a cylindrical surface that has a smaller outer diameter than that of the shoulder portion and is formed along the axial direction and an inclined surface that connects the cylindrical surface and the outer peripheral surface of the shoulder portion, and the diameter of the inclined surface gradually widens in the direction of the other axial direction side.

15 3. A rolling bearing unit according to claim 2, wherein the inclination angle of the inclined surface is more than 90 degrees and less than 175 degrees with respect to the cylindrical surface.

4. A rolling bearing unit comprising:

an outer ring;

an inner shaft disposed radially inward of the outer ring; and

two axial inner rings axially disposed one next to the other on the outer peripheral surface of the inner shaft;

5 wherein:

the inner ring on the one axial direction side has the inner shaft end on the one axial direction side crimped on the end face on the one axial direction side thereof, and a circular annular step portion is provided on the one axial end of the shoulder portion, and

10 the step portion has a cylindrical surface that has a smaller outer diameter than that of the shoulder portion and is formed along the axial direction and an annular inclined surface that connects the cylindrical surface and the outer peripheral surface of the shoulder portion, and the diameter of the annular inclined surface gradually widens in the direction of the other axial direction side.

15 5. A rolling bearing unit comprising:

an outer ring;

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an inner shaft disposed radially inward of the outer ring and having an inner ring fitting part on the outer peripheral surface of one axial direction side; and

an inner ring fitted on the inner ring fitting part and having the inner shaft end on the one axial direction side crimped on its end face on the one axial direction side thereof;

wherein the inner ring comprises, on an edge of the shoulder portion on the one axial direction side, an inclined surface the diameter of which gradually widens in the direction of the one axial direction side.

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6. A rolling bearing according to claim 5, wherein the inclination angle of the inclined surface is more than 90 degrees and less than 175 degrees with respect to the central axis of the inner ring.